1

2

1

2

3

1

2

1

1

2

1

2

1

2

WE CLAIM:

- 1 1. A method for reserving resources in a wireless network, said method comprising the steps of:
- monitoring a resource to obtain a resource value;
- estimating resources needed for radio dependent and radio independent layers based on said monitored resource value; and

reserving said needed resources at the radio dependent and radio independent layers based on said estimate.

- 2. The method of claim 1 wherein said monitoring step further includes the step of monitoring call arrivals, resource requirement, and resource usage.
- 3. The method of claim 2 further comprising the step of updating the rate at which said estimating is done if the difference in resource usage is greater than or equal to a pre-determined value.
- 4. The method in accordance with claim 3 wherein said step of estimating further includes the step of modeling the resources needed as a Wiener process.
 - 5. The method in accordance with claim 3 said calls are handoff calls.
- 6. The method in accordance with claim 3 wherein said calls are new calls originating within a cell.
- 7. The method in accordance with claim 3 wherein said calls are handoff calls and new calls originating within a cell.
- 8. A method for reserving resources in a mobile wireless internet protocol network, said method comprising the steps at a base station of:
- monitoring call arrivals and resource requirements;
- responsive to said monitoring, estimating the radio dependent and radio independent resources required; and

1

2

1

2

1

2

1

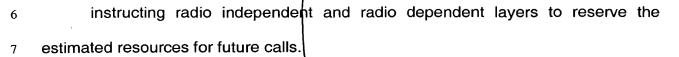
2

1

2

1

2



- 9. The method in accordance with claim 8 wherein said estimating step resides at a radio- independent layer of the internet protocol.
- 10. The method in accordance with claim 8 further comprising increasing the rate of said monitoring step if the difference in resource usage is greater than or equal to a threshold value.
- 11. The method in accordance with claim 10 wherein said estimating step comprises Wiener process-based stochastic models.
- 12. The method in accordance with claim 11 wherein said estimating step resides at a radio-independent layer of the internet protocol.
 - 13. The method of claim 12 wherein said dalls are handoff calls.
- 14. The method in accordance with claim 1/2 wherein said calls are new calls originating within a cell.
- 15. The method in accordance with claim 12 wherein said calls are handoff calls and new calls originating within a cell.
- 16. The method in accordance with claim 8 wherein said step of monitoring monitors instantaneous values of handoff call arrivals and resource requirements.
- 17. The method in accordance with claim 8 wherein said instructing step causes reservation of both radio resources and internet protocol layer resources.
- 1 18. The method in accordance with claim 17 wherein said estimating step is 2 based on a stochastic model.